Chapter (non-refereed)

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BRYOPHYTES

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Bedford Purlieus is mentioned by name in H.N. Dixon's "Moss Flora of Northamptonshire" (1899) where twelve mosses are recorded specifically at the site (see appended list). Seven of these species were found during the present survey, three could possibly still be present at the site, whilst two have probably vanished. Dixon's account of the hepatics (1911) has no records from this area.

A number of contributing factors - the climate, lack of suitable habitats and the past management of the wood - mean that few species can be expected. The site is in one of the driest areas of the country where the climate is of a continental type. The total number of "wet days" is about 120 (Ratcliffe, 1968), i.e. a day on which 1 mm of rain is recorded. Available habitats are limited by the absence of any exposed rocky material and comprise tree bases and fallen timber, the soil surface, rides, the damper sides of drainage channels and the seasonal stream running through the centre of the woodland. A very uniform flora is found throughout the area, the main variation being in the relative abundance of the species present. The main exceptions to this rule are the areas planted with conifers (mainly compartments 39, 40 and 43) and compartment 34 where there is a large open space dominated by bracken.

The typical bryophyte flora is illustrated by compartment 42B. The tree layer is of mixed coppice with a thin ground flora of Deschampsia cespitosa, Athyrium filix-femina, Dryopteris filix-mas, and Rubus fruticosus. The bryophyte layer on the surface of a brown calcareous clay is dominated by Eurhynchium striatum and Fissidens taxifolius. Atrichum undulatum, Eurhynchium praelongum, Fissidens bryoides and the liverwort Calypogeia fissa are present in moderate quantity on the bare soil surface, whilst the tree bases and stumps support Mnium hornum, Isothecium myosuroides and Lophocolea heterophylla. Rotting stumps and lying dead timber are mainly dominated by Brachythecium rutabulum and Lophocolea heterophylla with an occasional poorly developed specimen of Dicranum scoparium. In shady areas and particularly in situations where an old thicket has collapsed Thuidium tamariscinum has become locally dominant and formed a complete mat. Plagiochila asplenioides var. major and Mnium undulatum are usually associated with such areas.

This type of assemblage may be found in many parts of Bedford Purlieus but is limited in some areas by the density of the canopy and/or the litter layer. Where a dense tree layer prevails, e.g. compartments 32B, 36A, and 35 the ground cover of bryophytes is reduced to around 5-10%, mainly composed of Eurhynchium spp.and Fissidens taxifolius with very little else present.

A slight contrast is provided by the conifer areas, where, even on brown calcareous soils, a more acidic substrate of needles has accumulated. In compartment 39D a noticeable point is the frequency of Pseudoscleropodium purum which, together with Thuidium tamariscinum, Hypnum cupressiforme, Dicranum scoparium and Eurhynchium praelongum forms the main bryophyte mat. Polytrichum formosum may occasionally be seen in these areas whilst the rides through them, e.g. between compartments 39C and 39D, are dominated by mats of Thuidium tamariscinum and Pseudoscleropodium purum.

Rather more acid conditions occur in part of the Bedlams, where the woodland floor on either side of a ride is covered by a humus layer. Here Mnium hornum, Hypnum cupressiforme and Dicranella heteromalla will be found on the mixtures of exposed clay and humus around old stools and tree bases.

The open, bracken-dominated area in compartment 34 supports a very poor flora but it appears to have been burnt over fairly recently, for two species characteristic of burnt areas, Funaria hygrometrica and Ceratodon purpureus, are present. The dead wood and stumps in this area support Tetraphis pellucida, Dicranum scoparium and Hypnum cupressiforme, whilst on the grassy track running to the area, patches of Rhytidiadelphus squarrosus may be found.

Some habitats occur throughout the site. The most important are (i) the drain and ditch sides and (ii) the sites for epiphytic species. The upper parts of the drains and ditches support a flora similar to the rest of the wood, although the abundance of Fissidens taxifolius is very noticeable. Lower down, in moister conditions, Pellia endiviifolia is frequent together with sheets of Calypogeia fissa. At one point where the main ditch crosses the ride between compartments 41A and 42A there are areas dominated by Mnium longirostrum both on the ride surface and on the ditch sides. Epiphyte species are rare and confined to the tree bases and stumps. It is interesting to note that Dixon (1899) records Ulota bruchii as "very poor" a species certainly now not present in the wood and possibly eliminated by air pollution. The main epiphytes are Isothecium myosuroides, Hypnum cupressiforme and Mnium hornum, all on tree bases. A little Dicranoweissia cirrata was found and rarely the liverwort Metzgeria furcata occurs on tree bases near the ditches. Bryum capillare was recorded a few times on Elm trees by the main drainage ditch.

Finally, two species found as rarities during the survey which may exist elsewhere in the wood. In compartments 41A and 44A Homalia trichomanoides was found growing on old coppice stools and in one instance Plagiothecium undulatum was discovered growing on a rotten stump.

Mosses recorded by H.N. Dixon (1899)

Encalypta streptocarpa
\+ Ulota bruchii
* Homalia trichomanoides
* Pseudoscleropodium purum
* Cirriphyllum piliferum
* Eurhynchium swartzii
\+ Campylium chrysophyllum
* Hypnum cupressiforme
* H. cupressiforme var. filiforme
* Ctenidium molluscum
Pleuridium subulatum
* Dicranum scoparium

* Found in recent survey + probably extinct

Preliminary species list to October 1974

Mosses	Habitat where commonly found
Acrocladium cuspidatum	wet grassy rides
Amblystegium serpens	tree bases
Atrichum undulatum	soil surface
Barbula revoluta	soil surface in rides
B. unguiculata	soil surface in rides
Brachythecium rutabulum	dead timber
Bryum argentium	old culvert
B. capillare	epiphyte
Ceratodon purpureus	soil, burned areas
Cirriphyllum piliferum	soil surface
Ctenidium molluscum	soil surface
Dicranella heteromalla	clay soil surface
Dicranoweissia cirrata	epiphyte
Eurhynchium praelongum	soil surface
E. striatum	soil surface
E. swartzii	soil surface, grassy rides
Fissidens bryoides	soil surface
F. taxifolius	soil surface
F. incurvus	soil surface
Funaria hygrometrica	soil, burned areas
Hypnum cupressiforme	tree bases
Isothecium myosuroides	epiphyte
Mnium hornum	tree bases
M. longirostrum	rides and ditches
M. undulatum	soil surface
Plagiothecium denticulatum	tree base
P. undulatum	dead rotten stump
Polytrichum formosum	soil, conifer areas
Pseudoscleropodium purum	soil, conifer areas
Thamnium alopecurum	soil surface
Thuidium tamariscinum	soil surface
Tortula muralis	old culvert stonework

Hepatics

Calypogeia fissa	ditch sides
Lepidozia reptans	tree base
Lophocolea bidentata	grassy rides
L. heterophylla	epiphyte
Metzgeria furcata	epiphyte
Pellia endiviifolia	ditch bottoms
Plagiochila asplenioides	soil surface
P. asplenioides var. major	soil surface

All nomenclature as in Watson (1955)

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